

**RULE 423 -- MOTOR VEHICLE AND MOBILE EQUIPMENT COATING  
OPERATIONS**

*(Adopted 2/23/88) (Revised 9/4/90, 11/19/91, 2/9/93, 6/22/93, 3/29/95, 9/25/96, and 11/13/2002)*

- A. APPLICABILITY. The provisions of this Rule apply to any person who supplies, sells, offers for sale, applies, or specifies the use of coatings for motor vehicles, mobile equipment, and their parts or components.
- B. DEFINITIONS. For the purposes of this Rule the following definitions shall apply:
1. "Anti-Glare/Safety Coatings": A coating formulated to eliminate glare for safety purposes on interior surfaces of a vehicle and which shows a reflectance of 25 or less on a 60 degree gloss meter.
  2. "Basecoat": A pigmented topcoat which is the first topcoat applied as part of a multi-stage topcoat system.
  3. "Camouflage Coating": A coating used, principally by the military, to conceal equipment from detection.
  4. "Catalyst": A substance whose presence initiates the reaction between chemical compounds.
  5. "Clearcoat": A topcoat which contains no pigments and which is the final topcoat applied as part of a multi-stage topcoat system.
  6. "Coating": A liquid, liquefiable, or mastic composition which forms a solid protective, decorative, or functional adherent film after application.
  7. "Color Match": The ability of a coating to blend into an existing coating so that color difference is not visible.
  8. "Electrophoretic Dip": A coating application method where the coating is applied by dipping the component into a coating bath and an electrical potential difference exists between the component and the bath.
  9. "Electrostatic Application": A sufficient charging of atomized paint droplets to cause deposition principally by electrostatic attraction. This application shall be operated at a minimum of 60 kV power.
  10. "Enclosed Gun Washer": A device that is used for the cleaning of spray guns, pots, and hoses, that has an enclosed solvent container, is not open to the ambient air when in use, and has a mechanism to force the cleanup material through the gun while the cleaner is in operation.
  11. "Exempt Compounds": Any compound specifically excluded from the definition of Volatile Organic Compound (VOC) in the current version of District Rule 105, Definitions.

12. "Finishing": Any coating of incomplete vehicles, their parts and components, or mobile equipment for which the original coating was not applied at an Original Equipment Manufacturing plant coating assembly line.
13. "Grams of VOC per Liter of Coating Less Water and Less Exempt Compounds": The weight of VOC per combined volume of VOC and coating solids, calculated by the following equation:

$$\begin{array}{l} \text{Grams of VOC per Liter} \\ \text{of Coating less Water} \\ \text{and Exempt Compounds} \end{array} = \frac{W_s - W_w - W_{es}}{V_m - V_w - V_{es}}$$

Where:

$W_s$	=	Weight of volatile compounds (grams)
$W_w$	=	Weight of water (grams)
$W_{es}$	=	Weight of exempt compounds (grams)
$V_m$	=	Volume of coating material (liters)
$V_w$	=	Volume of water (liters)
$V_{es}$	=	Volume of exempt compounds (liters)

14. "Grams of VOC per Liter of Material": The weight of VOC per volume of material and is calculated by the following equation:

$$\begin{array}{l} \text{Grams of VOC per Liter} \\ \text{of Material} \end{array} = \frac{W_s - W_w - W_{es}}{V_m}$$

Where:

$W_s$	=	Weight of volatile compounds (grams)
$W_w$	=	Weight of water (grams)
$W_{es}$	=	Weight of exempt compounds (grams)
$V_m$	=	Volume of coating material (liters)

15. "Graphic Arts Coating": The application of logos, letters, numbers, or graphics to a painted surface by brush, roller, or airbrush.
16. "Group I Vehicles": These include motorized vehicles, passenger cars, large/heavy duty truck cabs and chassis, light and medium duty trucks, vans, and motorcycles.
17. "Group II Vehicles/Equipment": These include public transit buses and mobile equipment.
18. "Gun Washer": Electrically or pneumatically operated system designed and operated to reduce VOC emissions while cleaning spray equipment. A gun washer may also consist of spraying solvent through the spray gun into an enclosed container with a leak-free seal.
19. "Hand Application Methods": The application of coatings by nonmechanical hand-held equipment including by not limited to paint brushes, hand rollers, caulking guns, trowels, spatulas, syringe daubers, rags, and sponges.

20. "High-Volume, Low-Pressure Application (HVLP)": Spray equipment which is designed to operate and is operated using a high volume of air delivered at atomized air pressures between 0.1 and 10 psig measured dynamically at the center of the air cap and at the air horns and which operates at a maximum fluid delivery pressure not exceeding the manufacturer's recommended inlet air pressure.
21. "Large Production/Utility Bodies": The production of utility bodies at a rate greater than 20 vehicles per day.
22. "Metallic/Iridescent Topcoat": Any coating which contains more than 5 g/L (0.042 lb/gal) of iridescent particles composed of metal or metallic particles, such as mica or silicon, as applied, where such particles are visible in the dried film.
23. "Midcoat": A translucent topcoat which is the middle topcoat applied as part of a multi-stage topcoat system.
24. "Mobile Equipment": Any equipment which may be drawn or is capable of being driven on a roadway, including, but not limited to, truck bodies, truck trailers, camper shells, mobile cranes, bulldozers, construction and farm heavy equipment, concrete mixers, street cleaners, golf carts, all terrain vehicles, implements of husbandry, and hauling equipment used inside and around airports, docks, depots, and industrial and commercial plants, excluding utility bodies.
25. "Motor Vehicle": A vehicle which is self-propelled and which is physically capable of being driven on a highway, as defined in Section 415 of the California Vehicle Code.
26. "Multi-Stage Topcoat System": A topcoat system composed of either a basecoat/clearcoat (2-stage), groundcoat/basecoat/clearcoat or basecoat/midcoat/clearcoat (3-stage), or groundcoat/basecoat/midcoat/clearcoat (4-stage). Tintable primer systems may be included in the 3-stage or 4-stage category. Any water shall not be considered to be part of the coating.

The VOC content of a 2-stage coating system shall be calculated according to the following formula:

$$\text{VOC}_{\text{Total}} = \frac{\text{VOC}_{\text{bc}} + 2 \text{VOC}_{\text{cc}}}{3}$$

The VOC content of a 3-stage coating system shall be calculated according to the following formula:

$$\text{VOC}_{\text{Total}} = \frac{\text{VOC}_{\text{bc}} + \text{VOC}_{\text{gc or mc}} + 2 \text{VOC}_{\text{cc}}}{4}$$

The VOC content of a 4-stage coating system shall be calculated according to the following formula:

$$\text{VOC}_{\text{Total}} = \frac{\text{VOC}_{\text{gc}} + \text{VOC}_{\text{bc}} + \text{VOC}_{\text{mc}} + 2 \text{VOC}_{\text{cc}}}{5}$$

Where:  $\text{VOC}_{\text{Total}}$  = the average of the sum of the VOC content as applied in multi-stage topcoat system  
 $\text{VOC}_{\text{gc}}$  = the VOC content, as applied, of a pigmented groundcoat or tinted primer sealer  
 $\text{VOC}_{\text{bc}}$  = the VOC content, as applied, of a pigmented basecoat  
 $\text{VOC}_{\text{mc}}$  = the VOC content, as applied, of a translucent midcoat  
 $2 \text{VOC}_{\text{cc}}$  = two times the VOC content, as applied, of a transparent clearcoat

27. "Portable Coating Operation": Portable motor vehicle or mobile equipment coating operations which are subject to this rule and which occur at non-permitted locations. A non-permitted location for this definition means that the site where the coating takes place does not have an Air Pollution Control District permit for coating motor vehicles or mobile equipment.
28. "Precoat": Any coating which is applied to bare metal primarily to deactivate the metal surface for corrosion resistance prior to a subsequent application of a water-based coating. A precoat shall be limited to a two component or three component coating that cures by oxidation or chemical polymerization.
29. "Pretreatment Wash Primer": Any coating which contains a minimum of 0.5% acid by weight, is necessary to provide surface etching, and is applied directly to bare metal surfaces to provide corrosion resistance and promote adhesion for subsequent coatings.
30. "Primer": Any coating applied prior to the application of a topcoat for the purpose of corrosion resistance or adhesion of the topcoat.
31. "Primer Sealer": Any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat, color uniformity, and to promote the ability of an undercoat to resist penetration by the topcoat.
32. "Primer Surfacer": Any coating applied prior to the application of a topcoat for the purpose of corrosion resistance, adhesion of the topcoat and which promotes a uniform surface by filling surface imperfections.
33. "Reducer": Any volatile organic liquid including solvents used to reduce coating viscosity.
34. "Refinishing": Any coating of vehicles, their exterior parts or components, or mobile equipment, including partial body collision repairs, for the purpose of protection or beautification and which is subsequent to the original coating

applied at an Original Equipment Manufacturing (OEM) plant coating assembly line.

35. "Repair": Recoating portions of a recently coated vehicle wherein the coating has been damaged following the normal coating operation.
36. "Small Production/Utility Bodies": The production of utility bodies at a rate of 20 vehicles per day or less.
37. "Specialty Coatings": Unique coatings and compliant coatings with additives which are necessary due to unusual and uncommon job performance requirements. These coatings include, but are not limited to, adhesion promoters, uniform finish blenders, elastomeric materials, gloss flatteners, bright metal, and trim repair coatings.
38. "Spot Priming": Small area application of a primer material to prevent rust or fill surface irregularities prior to the application of subsequent coatings.
39. "Spray Booth": A controlled enclosure which meets Uniform Fire Code standards, exhausts through filters or other air pollution control device approved by the Air Pollution Control Officer (APCO) having a particulate removal efficiency of at least 95%, as defined by the manufacturer's technical data sheet or equivalent, and provides adequate ventilation, air velocity, and safety features, as required by the Code.
40. "Surface Preparation": The use of VOC containing solvents applied with cloth, sponge, or other medium for the purpose of removing dust, grease, and other contaminants from a surface just prior to application of a coating.
41. "Temporary Protective Coating": Any coating applied for the purpose of protecting adjacent areas to that being painted from overspray. The temporary protective coating is removed after primer or topcoat applications.
42. "Topcoat": Any coating applied over a primer, primer system, or an original OEM finish for the purpose of protection or appearance. For the purposes of this Rule, solid color and metallic/iridescent topcoats are single stage applications and the total VOC content of a multi-stage topcoat system shall be used to determine compliance with the VOC standards in Section D.
43. "Touch-up": Coating operation incidental to the main coating process necessary to cover minor imperfections, as applied by brush or airbrush.
44. "Transfer Efficiency": The ratio of the weight of coating solids which adhere to the object being coated to the weight of coating solids used in the application process, expressed as a percentage.
45. "Underbody and Chip Resistant Coatings": High solids coatings applied to wheel wells; the inside of door panels, fenders, or trunks; the underside of a trunk, hood, or the motor vehicle itself; or bed of a truck for the purpose of sound deadening, rust protection, or chip resistance.

46. "Utility Body": A special purpose compartment or unit that will be bolted, welded, or affixed onto an existing cab and chassis. The compartment may serve as storage for equipment or parts.
47. "Volatile Organic Compound (VOC)": As defined in the current version of District Rule 105, Definitions.

C. EXEMPTIONS

1. Motor vehicle or mobile equipment coating operations shall be exempt from this rule if they only employ the following coating application methods:
  - a. hand-held nonrefillable aerosol cans of 18 ounces or less, or
  - b. graphic arts coating.
2. Any coating or cleaning operation subject to the requirements of this Rule shall be exempt from the requirements of Rule 411, Surface Coating of Metal Parts and Products, and Rule 407, Organic Materials.
3. The following Subsections of this Rule shall not apply to the painting of a Group I or Group II vehicle/equipment by the resident of a one or two family dwelling, if that resident is the registered owner of the vehicle or equipment being painted: D.4, Transfer Efficiency, D.7, Spray Booth, and E, Recordkeeping. Only compliant coatings shall be used. The operation shall not cause a public nuisance and shall be in compliance with local fire protection agency requirements.
4. Subsection D.7 of this Rule, Spray Booth, shall not apply to repair, touch-up, or spot-primering operations which do not exceed a total of nine square feet per vehicle. All such operations shall be conducted under a District Permit to Operate for a facility or a Portable Coating Operation.
5. Coating operations of Group II vehicles/equipment which cannot be reasonably conducted in an available spray booth due to the size and shape of the device may be exempted from Subsection D.7 of this Rule, Spray Booth, on a case-by-case basis with prior written approval of the APCO.
6. The application of chip resistant or underbody coatings is not subject to Subsection D.4, Transfer Efficiency, of this Rule.

D. REQUIREMENTS

1. Group I and II Vehicles/Equipment. After the applicable effective date indicated below, no person shall finish or refinish any Group I vehicle, their parts and components, any Group II vehicles and mobile equipment where color match is required, or any small production/utility bodies where color match is required, using any coating with an VOC content in excess of the following limits, expressed as grams of VOC per liter of coating applied, excluding water and exempt compounds:

Limits  
Grams of VOC per Liter of Applied Coating,  
Less Water and Less Exempt Compounds

Effective Date  
9/25/96

	<u>g/L</u>	<u>(lbs/gal)</u>
Pretreatment Wash Primer	780	(6.5)
Primer/Primer Surfacer	580	(4.8)
Primer Sealer	550	(4.6)
Solid Color Topcoat	420	(3.5)
Metallic/Iridescent Topcoat	540	(4.5)
Multi-Stage Topcoat System	540	(4.5)

2. Group II Vehicles/Equipment. After the applicable effective date indicated below, no person shall finish or refinish Group II vehicles and equipment or their parts and components where color match is not required, small production/utility bodies where color match is not required, or large production/utility bodies, using any coating with a VOC content in excess of the following limits, expressed as grams of VOC per liter of coating applied, excluding water and exempt compounds:

Limits  
Grams of VOC per Liter of Applied Coating,  
Less Water and Less Exempt Compounds

Effective Date  
9/25/96

	<u>g/L</u>	<u>(lbs/gal)</u>
Pretreatment Wash Primer	780	(6.5)
Precoat	600	(5.0)
Primer	340	(2.8)
Topcoat	420	(3.5)
Metallic/Iridescent Topcoat	420	(3.5)
Camouflage	420	(3.5)

3. Add-On Control Equipment Option: A person may comply with the provisions of section D by using air pollution control equipment provided that:
- a. The emissions collection device shall capture at least 90 percent, by weight, of all the organic emissions from the source to the control equipment, and
  - b. The abatement device shall reduce the organic emissions by at least 95 percent, by weight, and
  - c. Written approval for such equipment is received from the APCO prior to installation.

4. Transfer Efficiency: No person shall apply any coating to any Group I or II vehicle or mobile equipment or their exterior parts and components unless one of the following methods is properly used and has been demonstrated to have achieved a transfer efficiency of at least 65%:
  - a. Hand application methods;
  - b. Electrophoretic Dip coating;
  - c. Electrostatic application;
  - d. High-Volume, Low-Pressure (HVLP) application; or
  - e. Any other coating application method which has been demonstrated to the United States Environmental Protection Agency or the APCO to be capable of achieving at least 65 percent transfer efficiency or the equivalent efficiency of HVLP.
5. Surface Preparation and Cleanup Solvent: The requirements of this Subsection shall apply to any person using organic solvent for surface preparation and cleanup.
  - a. Closed containers approved by the local fire agency shall be used for the storage or disposal of solvent-containing cloth or paper used for surface preparation and cleanup. Containers shall be nonabsorbent.
  - b. All VOC containing materials, including but not limited to, fresh or spent solvent, coatings, and reducers, shall be kept in approved, closed containers when not in use.
  - c. No person shall use materials containing VOCs for spray equipment cleanup unless:
    - 1) An enclosed gun washer is properly used for cleaning, or
    - 2) A gun washer, approved by the APCO, is properly used for cleaning and the composite vapor pressure of materials used is less than 45 mm Hg (0.87 psi) at a temperature of 20 degrees Celsius (68 F°).
  - d. No person shall use VOC-containing materials which have a VOC content of more than 200 g/L (1.7 lb/gal) of material for substrate surface preparation just prior to coating. The VOC content of surface preparation solvent used to clean plastic parts just prior to coating or VOC-containing materials used for the removal of wax and grease shall not exceed 780 g/L (6.5 lb/gal).
6. Specialty Coatings: No person shall use any specialty coating with a VOC content in excess of 840 g/L (7.0 lb/gal) of coating applied, excluding water and exempt compounds. Use of all specialty coatings, except anti-glare/safety coatings, shall not exceed 5.0 percent of all coatings applied, on a monthly basis.



7. Spray Booth: No Group I or Group II motor vehicle/equipment, parts, or components shall be painted, in whole or in part, without using an approved spray booth constructed in a manner consistent with the Uniform Fire Code, except as noted in Section C, Exemptions. All spray booths must be approved by the local fire agency. Particulate emissions from all spray booths must be controlled by filtration or other APCO-approved method by at least 95%. Filtering or removal efficiency must be verified by manufacturer's technical data sheet or equivalent documentation and retained on site for inspection by the District.
8. Precoat Limitation: No person shall use precoat in excess of 25% by volume, of the amount of primer used. The use of a precoat in place of or instead of a primer in a manner not consistent with the intent of this Rule is prohibited.
9. Pretreatment Wash Primer Limitation: No person shall use a pretreatment wash primer in excess of 10% by volume of the amount of primer used.
10. Prohibition of Specification: No person shall solicit, require for use, or specify the application of a coating on a Group I or II vehicle, mobile equipment, or their parts or components if such use or application results in a violation of the provisions of this Rule. The prohibition of this Section shall apply to all written or oral contracts under the terms of which any coating which is subject to the provisions of this Rule is to be applied to any motor vehicle, mobile equipment, or their parts and components at any physical location within the District.
11. Prohibition of Sale: No person shall supply, offer for sale, or sell within the District any coating, except hand-held, nonrefillable aerosol cans of 18 ounces or less, if the application of such product is prohibited, at the time of sale, by this Section. Compliance with this prohibition shall be determined by measuring the VOC content of each and every component of a coating or coating system which has been reduced using the manufacturer's recommended type and maximum amount of reducer. The prohibition of this Subsection shall apply to the wholesale or retail sale of any coating that will be applied at any physical location within the District and shall not apply to any coating shipped outside of the District for use outside of the District.

This requirement shall not apply to the sale or offer of sale of any specially designated coating to any person operating approved air pollution control equipment that meets the requirements of Subsection D.3 if:

- a. The coating container clearly states: "Use of this coating is a violation of San Luis Obispo County APCD Rule 423 unless the VOC emissions from this coating are controlled by an APCO-approved VOC add-on control device". Removal or defacing of this statement constitutes a violation of the Rule; and
- b. For each and every amount of this specially designated coating sold, the seller shall maintain a record identifying each buyer's name and address, APCD permit number of the buyer's facility, and amount of each coating

sold. This record must be kept for a minimum of three years and made available to the District upon request.

12. Compliance Statement Requirement: The manufacturer of coatings subject to this Rule shall include VOC designations, as supplied, including coating components, expressed in grams per liter or pounds per gallon, excluding water and exempt compounds, on labels or data sheets. This designation shall include a statement of manufacturer's recommendation regarding thinning, reducing, or mixing with any other VOC containing materials. This statement shall include a designation of VOC on an as-applied basis, excluding water and exempt compounds based on the manufacturer's recommendations. Omission of this designation shall constitute a violation of this Rule.
13. Coating Containing 1,1,1-Trichloroethane: No person shall apply any coating to any motor vehicle, mobile equipment, or their parts or components, if that coating contains 1,1,1-trichloroethane.
14. No person shall sell or offer for sale for use within the District any HVLP gun without a permanent marking denoting the maximum inlet air pressure in psig at which the gun will operate within the parameters specified in Subsection B.20.
15. Any person selling or supplying solvents or coatings within the District and subject to this Rule shall make and retain complete receipts of all customer solvent and coating purchases, including cash sales, recording the customer's name, business or home address, and telephone number; the type, amount, and VOC content of each subject product, as sold; date of sale; and manufacturer's name and part number. If a customer refuses to provide this information, the receipt shall be marked "Refused" in the area designated for customer information, unless such information can be provided by the seller or supplier, provided the seller or supplier shall retain all of the other required information. These records shall be retained for at least one year and made available for District inspection and copying upon request.
16. Temporary Protective Coating: No person shall sell or use a temporary protective coating (masking liquid) that has a VOC content of greater than 60 g/L (0.50 lb/gal).
17. All Portable Coating Operations shall use a containment method to prevent overspray that has been approved by the APCO for their specific coating operation.
18. No owner or operator of a motor vehicle and/or mobile equipment coating operation shall use or possess a motor vehicle and/or mobile equipment coating that contains hexavalent chromium or cadmium after December 31, 2003.

E. RECORDKEEPING REQUIREMENTS

1. Any owner or operator of a coating operation subject to this Rule shall:

- a. Maintain and have available during an inspection a current list of all coatings in use at their facility. The list shall provide the data necessary to evaluate compliance for each coating, including the following information, as applicable:
    - 1) The coating manufacturer and part number.
    - 2) Coating, catalyst, and reducer used.
    - 3) Mix ratio of components used.
    - 4) VOC content of coating, as applied.
    - 5) The coating category from Subsection D.1 or D.2, Requirements.
  - b. Maintain purchase records identifying the name, part number, amount, and VOC content for each VOC containing material purchased or received. Purchase records shall clearly show the amount of pretreatment wash primer, precoat, primer, and specialty coatings purchased.
  - c. Maintain a summary of the total monthly VOC emissions for the calendar year beginning on January 1. This VOC emissions summary shall be categorized by coating type and should indicate if a product contains hexavalent chromium compounds such as lead or zinc chromate. The summary may be determined from purchase invoices or usage records.
  - d. Record on a monthly basis the type and amount of solvent used for cleanup and surface preparation. If purchase records are used to determine the amount of solvents used, then records and manifests of the amounts of solvents disposed of or sent to a recycler must also be maintained and made available to the APCO upon request.
  - e. Have current manufacturer's specification sheets, material safety data sheets, or technical data sheets, which list the VOC content of each material available for review on site.
  - f. Retain and make available all records from the previous 36-month period for inspection by District personnel.
2. Any person coating utility bodies must keep records of the number of utility bodies coated each day.

F. TEST METHODS

1. Coating VOC content shall be determined using EPA Method 24. The exempt organic compound content of coatings or solvents shall be determined using ASTM Method D 4457-85.
2. The measurement of acid content of pretreatment wash primers shall be done in accordance with ASTM Method D 1613-85 (modified).
3. The measurement of the metal and silicon content of metallic/iridescent coatings shall be determined by South Coast AQMD Method 311 (Determination of

Percent Metal in Metallic Coatings by Spectrographic Method) contained in "Laboratory Method of Analysis for Enforcement Samples, Rev 1991."

4. The collection and capture efficiency of organic emissions, as specified in Subsection D.3, Requirements, shall be measured as follows:
  - a. Capture efficiency shall be determined by the methods described in 40 CFR 52.741.
  - b. Measurement of vapor flow through pipes shall be determined by EPA Method 2A.
  - c. Measurement of VOC vapor concentration shall be determined by EPA Method 25A or EPA Method 25B.
5. Transfer Efficiency shall be determined by using a method which shall:
  - a. Be modeled after the test method described in the EPA document (EPA/600/2-88-26b) "Development of Proposed Standard Test Method for Spray Painting Transfer Efficiency."
  - b. Simulate the transfer efficiency achieved during the actual operations.
  - c. Have received prior written approval by the APCO.
6. The composite vapor pressure of a blended solvent shall be determined by quantifying the amount of each organic compound in the blend using gas chromatographic analysis (ASTM D 2306-81) and by calculating the composite vapor pressure of the solvent by summing the partial pressures of each compound at 20 degrees Celsius. For the purposes of this calculation, the blend shall be assumed to be an ideal solution where Raoult's Law applies.
7. The reflectance of anti-glare safety coatings shall be measured by ASTM Test Method D 523.